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EXAMINER	
FIGUEROA, MARISOL	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,135	CREAMER ET AL.	
	Examiner	Art Unit	
	Marisol Figueroa	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) filed on July 19, 2004 has been considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 13, 14, 20-23, 33, 35, 36, 49, 50, 56, 57, 58, and 59** are rejected under 35 U.S.C. 102(e) as being anticipated by **Jagadeesan et al. U.S. Publication No. 2005/0059400 A1**.

Regarding claim 13, Jagadeesan discloses a method of roaming between a cellular network and a wireless network comprising the steps of:

during an established cellular call, detecting a signal from the wireless network (p.0004, lines 1-9; p.0032, lines 1-7; a mobile station actively connected with a first network, e.g. WLAN or cellular, monitors the quality of the first link between a first network and also monitors the quality of a second network, e.g. WLAN or cellular, accordingly in order to monitor the second link it is inherent that the mobile station must detect the second network);

comparing a measure of strength of the signal received from the wireless network with a measure of strength of a signal received from the cellular network (p.0004, lines 9-13; p.0005, lines

12-23; the qualities of the first and second link are compared against a threshold, the quality metric may be a received signal strength measurement); and

initiating a handoff of the cellular call from the cellular network to the wireless network according to said comparing step (p.0004, lines 9-13; p.0032, lines 1-7; p.0041; 0042, lines 1-10; the call is handed off from a first network, e.g. WLAN or cellular, to a second network , e.g. WLAN or cellular, according to the qualities of the links compared against a threshold, the call is handed off from a cellular network to a wireless network if the cellular network is the preferred or default network and vice-versa).

Regarding claim 14, Jagadeesan discloses the method of claim 13, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Regarding claim 20, Jagadeesan discloses a method of roaming between a cellular network and a wireless network comprising the steps of:

during an established call over the wireless network, detecting the cellular network (p.0004, lines 1-9; a mobile station actively connects a call with a WLAN and monitors the quality of the first link, i.e. call established with the WLAN, and the quality of the second link, i.e. cellular network detected for potential handoff);

establishing a communications link with a mobile data base station of the cellular network (p.0014, lines 12-19), such that a streaming session in the wireless network over which the call is conducted is terminated (p.0004, lines 9-13; p.0014, lines 12-19; the call is handed off from the WLAN to the cellular network according to a quality measurement determination, and therefore it is inherent that communication session is terminated with the WLAN); and

continuing the call over a voice channel of the cellular network (p.0004, lines 9-13; p.0014, lines 12-19; p.0015, lines 1-3; the call is continued through a wireless link, e.g. voice channel, with the cellular network).

Regarding claim 21, Jagadeesan discloses the method of claim 20, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Regarding claim 22, Jagadeesan discloses a method of roaming between a cellular network and a wireless network comprising the steps of:

during an established call conducted over the wireless network using a streaming session, detecting a signal from the cellular network (p.0004, lines 1-9; p.0032, lines 1-7; a mobile station actively connected with a first network, e.g. WLAN or cellular, monitors the quality of the first link between a first network and also monitors the quality of a second network, e.g. WLAN or cellular, accordingly in order to monitor the second link it is inherent that the mobile station must detect the second network);

comparing a measure of strength of the signal received from the cellular network with a measure of strength of a signal received from the wireless network (p.0004, lines 9-13; p.0005, lines 12-23; the qualities of the first and second link are compared against a threshold, the quality metric may be a received signal strength measurement); and

initiating a handoff of the call from the wireless network to the cellular network according to said comparing step (p.0004, lines 9-13; p.0032, lines 1-7; p.0041; 0042, lines 1-10; the call is handed off from a first network, e.g. WLAN or cellular, to a second network , e.g. WLAN or cellular, according to the qualities of the links compared against a threshold, the call is handed of from a cellular network to a wireless network if the cellular network is the preferred or default network and

vice-versa).

Regarding claim 23, Jagadeesan discloses the method of claim 22, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Regarding claim 33, Jagadeesan discloses a system for roaming between a cellular network and a wireless network comprising:

means for detecting a signal from the wireless network during an established cellular call (p.0027, the mobile station communicates with the cellular network and the WLAN through the wireless interface 48, therefore it is inherent this is the means for detecting signals from both networks);

means for comparing a measure of strength of the signal received from the wireless network with a measure of strength of a signal received from the cellular network (p.0029, lines 8-12; p.0005, lines 12-18; controller monitors the qualities of the link, e.g. received signal strength); and

means for initiating a handoff of the cellular call from the cellular network to the wireless network according to a comparison made by said means for comparing (p.0025, lines 10-14; p.0029, lines 12-15). Further see remarks about claim 13 above.

Regarding claim 35, Jagadeesan discloses a system for roaming between a cellular network and a wireless network comprising:

means for detecting the cellular network during an established call over the wireless network (p.0004, lines 1-9; p.0027, a mobile station actively connects with a WLAN and a cellular network through the wireless interface 48, therefore it is inherent that this is the means for detecting signals from both networks);

means for establishing a communications link with a mobile data base station of the cellular network (p.0027), such that a streaming session in the wireless network over which the call is conducted is terminated (p.0004, lines 9-13; p.0014, lines 12-19; the call is handed off from the WLAN to the cellular network according to a quality measurement determination, and therefore it is inherent that communication session is terminated with the WLAN); and

means for continuing the call over a voice channel of the cellular network (p.0004, lines 9-13; p.0014, lines 12-19; p.0015, lines 1-3; the call is continued through a wireless link, e.g. voice channel, with the cellular network).

Regarding claim 36, Jagadeesan discloses a system for roaming between a cellular network and a wireless network comprising:

means for detecting a signal from the cellular network during an established call conducted over the wireless network using a streaming session (p.0004, lines 1-9; p.0027, a mobile station actively connects with a WLAN and a cellular network through the wireless interface 48, the mobile station monitors the quality of the first link, i.e. call established with the WLAN, and the quality of the second link, i.e. cellular network detected for potential handoff);

means for comparing a measure of strength of the signal received from the cellular network with a measure of strength of a signal received from the wireless network (p.0029, lines 8-15; p.0004, lines 9-13; p.0005, lines 12-18; controller monitors the qualities of the link, e.g. received signal strength, and compares it to a given threshold for determining when to perform handoff); and

means for initiating a handoff of the wireless call from the wireless network to the cellular network according to a comparison made by said means for comparing (p.0025, lines 10-14; p.0029, lines 12-15).

Regarding claim 49, Jagadeesan discloses machine readable storage, having stored thereon a computer program having a plurality of code sections (p.0030, lines 1-15) executable by a machine for causing the machine to perform the steps of:

during an established cellular call over a cellular network, detecting a signal from a wireless network (p.0004, lines 1-9; p.0032, lines 1-7; a mobile station actively connected with a first network, e.g. WLAN or cellular, monitors the quality of the first link between a first network and also monitors the quality of a second network, e.g. WLAN or cellular, accordingly in order to monitor the second link it is inherent that the mobile station must detect the second network);

comparing a measure of strength of the signal received from the wireless network with a measure of strength of a signal received from the cellular network (p.0004, lines 9-13; p.0005, lines 12-23; the qualities of the first and second link are compared against a threshold, the quality metric may be a received signal strength measurement); and

initiating a handoff of the cellular call from the cellular network to the wireless network according to said comparing step (p.0004, lines 9-13; p.0032, lines 1-7; p.0041; 0042, lines 1-10; the call is handed off from a first network, e.g. WLAN or cellular, to a second network , e.g. WLAN or cellular, according to the qualities of the links compared against a threshold, the call is handed of from a cellular network to a wireless network if the cellular network is the preferred or default network and vice-versa).

Regarding claim 50, Jagadeesan discloses the machine readable storage of claim 49, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Regarding claim 56, Jagadeesan discloses a machine readable storage, having stored thereon a computer program having a plurality of code sections (p.0030, lines 1-15) executable by a machine for causing the machine to perform the steps of:

during an established call over a wireless network, detecting a cellular network (p.0004, lines 1-9; a mobile station actively connects a call with a WLAN and monitors the quality of the first link, i.e. call established with the WLAN, and the quality of the second link, i.e. cellular network detected for potential handoff);

establishing a communications link with a mobile data base station of the cellular network (p.0014, lines 12-19), such that a streaming session in the wireless network over which the call is conducted is terminated (p.0004, lines 9-13; p.0014, lines 12-19; the call is handed off from the WLAN to the cellular network according to a quality measurement, therefore it is inherent that communication session is terminated with the WLAN); and

continuing the call over a voice channel of the cellular network (p.0004, lines 9-13; p.0014, lines 12-19; p.0015, lines 1-3; the call is continued through a wireless link, e.g. voice channel, with the cellular network).

Regarding claim 57, Jagadeesan discloses the machine readable storage of claim 56, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Regarding claim 58, Jagadeesan discloses a machine readable storage having stored thereon a computer program having a plurality of code sections (p.0030, lines 1-15) executable by a machine for causing the machine to perform the steps of:

during an established call conducted over a wireless network using a streaming session, detecting a signal from a cellular network (p.0004, lines 1-9; a mobile station actively connects a call with a WLAN and monitors the quality of the first link, i.e. call established with the WLAN, and the quality of the second link, i.e. cellular network detected for potential handoff);

comparing a measure of strength of the signal received from the cellular network with a measure of strength of a signal received from the wireless network (p.0029, lines 8-15; p.0004, lines 9-13; p.0005, lines 12-18; controller monitors the qualities of the link, e.g. received signal strength, and compares it to a given threshold for determining when to perform handoff);

and initiating a handoff of the wireless call from the wireless network to the cellular network according to said comparing step (p.0025, lines 10-14; p.0029, lines 12-15; the call is handed off from a WLAN to a cellular network according to the qualities of the links compared against a threshold).

Regarding claim 59, Jagadeesan discloses the machine readable storage of claim 58, wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0005, lines 11-12; the WLAN may communicate using the IEEE 802.11 protocol).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-4, 7, 9, 11, 12, 31, 32, 37-40, 43, and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al. U.S. Publication No. 2003/0134636 A1** in view of **Ibe et al. U.S. Publication No. 2004/0087307 A1.**

Regarding claim 1, Sundar discloses a method of roaming between a cellular network and a wireless network (p.0057, lines 1-5; p.0080, lines 1-6) comprising the steps of:

receiving an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the target MSC, e.g. WLAN MSC, receives a handoff request [Fig. 20, SIP INVITE] from the mobile station when it senses the RF strength of the WLAN network); wherein the invitation is sent from a mobile communications device engaged in a cellular call over a cellular voice channel (p.0084, lines 10-12);

sending an acknowledgement of the invitation to the mobile communications device over the wireless network (p.0084, lines 13-14; the target MSC acknowledges the request [Fig.20, SIP 200 OK]); and

initiating a handoff (p.0084, lines 14-31; the MSC sends an HO COMMAND to the MS and the MS acknowledges the command and the handoff is commenced by the BSC), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose the step of authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be on the WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time

of the invention to authenticate the mobile communications device over the wireless network as taught by Ibe, since it is part of an initialization process the mobile device has to go through in order to be authorized to receive service from the wireless network.

Regarding claim 2, the combination of Sundar and Ibe discloses the method of claim 1, Sundar further disclose wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0021, lines 1-7; a WLAN network according to the 802.xx protocols).

Regarding claim 3, the combination of Sundar and Ibe discloses the method of claim 1, Sundar further disclose wherein the invitation is formatted using Session Initiation Protocol (p.0057, lines 13-17; p.0084, lines 10-13; the handoff request message, i.e. invitation, is sent using SIP).

Regarding claim 4, the combination of Sundar and Ibe discloses the method of claim 1, Sundar further disclose wherein said initiating step comprises the step of a gateway sending a communication to a mobile switching center indicating that the mobile communications device has received a signal having a minimum amount of power from a wireless access point in the wireless network (p.0084, lines 1-14; the handoff starts when the BSC serving the mobile station decides that handoff is required based on information received from MS using the Network Sensing Method [sensing the RF strength in the proximity of the WLAN for deciding when to start using the WLAN network] and sends a handoff required message to the Source MSC, it is inherent to recognize that the handoff required message is triggered by a minimum amount of power received at the MS, therefore the handoff required is a message is an indication that a received signal contains a minimum amount of power from an access point of a WLAN).

Regarding claim 7, Sundar discloses a method of roaming between a cellular network and a wireless network (p.0057, lines 1-5; p.0080, lines 1-6) comprising the steps of:

during an established cellular call using a cellular voice channel, detecting the wireless network within a mobile communications device (p.0080; p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; a mobile station while roaming senses the RF strength in the proximity of the WLAN);

sending an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the mobile station sends a handoff request [Fig. 20, SIP INVITE] to the target MSC, e.g. WLAN MSC, when it senses the RF strength of the WLAN network while engaged in a call) to a gateway interface linking the cellular network with the Internet (Fig. 15, WLAN MSC 320 linked to IP, i.e. internet);

receiving an acknowledgement of the invitation (p.0084, lines 13-14; the target MSC acknowledges the request [Fig.20, SIP 200 OK]); and

initiating a handoff (p.0084, lines 14-31; the MSC sends an HO COMMAND to the MS and the MS acknowledges the command and the handoff is commenced by the BSC), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose the step of authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be tuned on in the WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to authenticate the mobile communications device over the wireless

network as taught by Ibe, since it is part of an initialization process the mobile device has to go through in order to be authorized to receive service from the wireless network.

Regarding claim 9, the combination of Sundar and Ibe discloses the method of claim 7, Sundar further disclose wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0021, lines 1-7; a WLAN network according to the 802.xx protocols).

Regarding claim 11, the combination of Sundar and Ibe discloses the method of claim 7, Sundar further disclose wherein said initiating step comprises the step of a gateway sending a communication to a mobile switching center indicating that the mobile communications device has received a signal of adequate power from an access point in the wireless network (p.0084, lines 1-14; the handoff starts when the BSC serving the mobile station decides that handoff is required based on information received from MS using the Network Sensing Method [sensing the RF strength in the proximity of the WLAN for deciding when to start using the WLAN network] and sends a handoff required message to the Source MSC, it is inherent to recognize that the handoff required message is triggered by a signal of adequate power received at the MS, therefore the handoff required is a message is an indication that a received signal contains adequate power from the WLAN to handoff to that network).

Regarding claim 12, the combination of Sundar and Ibe discloses the method of claim 7, Sundar further disclose wherein the acknowledgement is sent from a gateway interface (Fig. 15, WLAN MSC 302 between IP and PSTN/TDM) between the cellular network and the Internet (p.0084, lines 10-14; the target MSC, i.e. WLAN MSC, sends an acknowledgement to the mobile station).

Regarding claim 31, Sundar discloses a system for roaming for roaming between a cellular network and a wireless network (abstract, lines 1-4; p.0057, lines 1-5; p.0080, lines 1-6) comprising:

means for receiving an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the target MSC, e.g. WLAN MSC, receives a handoff request [Fig. 20, SIP INVITE] from the mobile station when it senses the RF strength of the WLAN network); wherein the invitation is sent from a mobile communications device engaged in a cellular call over a cellular voice channel (p.0084, lines 10-12);

means for sending an acknowledgement of the invitation to the mobile communications device over the wireless network (p.0084, lines 13-14; the target MSC sends an acknowledgement of the request [Fig.20, SIP 200 OK]); and

means for initiating a handoff (p.0084, lines 14-31; the MSC initiates the handoff sending an HO COMMAND to the MS), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose means for authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be tuned on in the WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to include means for authentication, i.e. authentication server, to authenticate the communications device over the wireless network as taught by Ibe, in order to initialize the mobile device and be authorized to receive service from the wireless network.

Regarding claim 32, Sundar discloses a system for roaming between a cellular network and a wireless network (abstract, lines 1-4; p.0057, lines 1-5; p.0080, lines 1-6) comprising:

means for detecting the wireless network within a mobile communications device during an established cellular call using a cellular voice channel (p.0080; p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; a mobile station while roaming senses the RF strength in the proximity of the WLAN, it is inherently that the mobile station has means for detecting the wireless network, e.g. antenna);

means for sending an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the mobile station sends a handoff request [Fig. 20, SIP INVITE] to the target MSC, e.g. WLAN MSC, inherently the mobile station has means for sending an invitation, e.g. transmitter);

means for receiving an acknowledgement of the invitation (p.0084, lines 13-14; the target MSC sends an acknowledgement to the MS [Fig.20, SIP 200 OK]; inherently the MS has means for receiving an acknowledgement, e.g. receiver); and

means for initiating a handoff (p.0084, lines 14-31; the MSC are the means for initiating handoff because it sends an HO COMMAND to the MS and after the MS acknowledges it, the handoff begins by the BSC), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose means for authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be tuned on in the WLAN goes through an initialization process in which the mobile device sends a

registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to include means for authentication, i.e. authentication server, to authenticate the communications device over the wireless network as taught by Ibe, in order to initialize the mobile device and be authorized to receive service from the wireless network.

Regarding claim 37, Sundar discloses a machine readable storage, having stored thereon a computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:

receiving an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the target MSC, e.g. WLAN MSC, receives a handoff request [Fig. 20; SIP INVITE] from the mobile station when it senses the RF strength of the WLAN network); wherein the invitation is sent from a mobile communications device engaged in a cellular call over a cellular voice channel (p.0084, lines 10-12);

sending an acknowledgement of the invitation to the mobile communications device over the wireless network (p.0084, lines 13-14; the target MSC acknowledges the request [Fig.20, SIP 200 OK]); and

initiating a handoff (p.0084, lines 14-31; the MSC sends an HO COMMAND to the MS and the MS acknowledges the command and the handoff is commenced by the BSC), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose the step of authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device

happens to be tuned on in the WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to authenticate the mobile communications device over the wireless network as taught by Ibe, since it is part of an initialization process the mobile device has to go through in order to be authorized to receive service from the wireless network.

Sundar inherently has the *machine readable storage* given that Sundar shows a process, the process would be implemented by a processor that requires a "computer readable storage", e.g. a RAM, to function.

Regarding claims 38, 39, and 40, the claims are rejected over the same reasons stated about claims 2, 3, and 4 accordingly, as they recite the same limitations of claims 38, 39, and 40. See remarks about claims 38, 39, and 40 above.

Regarding claim 43, Sundar discloses a machine readable storage, having stored thereon a computer program having a plurality of code sections executable by a machine for causing the machine to perform the steps of:

during an established cellular call using a cellular voice channel, detecting the wireless network within a mobile communications device (p.0080; p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; a mobile station while roaming senses the RF strength in the proximity of the WLAN);

sending an invitation over the wireless network (p.0083, lines 1-6; p.0084, lines 1-13; p.0085, lines 4-5; the mobile station sends a handoff request [Fig. 20, SIP INVITE] to the target MSC, e.g. WLAN MSC, when it senses the RF strength of the WLAN network while engaged in a call) to a

gateway interface linking the cellular network with the Internet (Fig. 15, WLAN MSC 320 linked to IP, i.e. internet);

receiving an acknowledgement of the invitation (p.0084, lines 13-14; the target MSC acknowledges the request [Fig.20, SIP 200 OK]); and

initiating a handoff (p.0084, lines 14-31; the MSC sends an HO COMMAND to the MS and the MS acknowledges the command and the handoff is commenced by the BSC), wherein the established cellular call is switched from the cellular network to the wireless network (p.0057, lines 1-6; the telephone calls between the WWAN and WLAN networks).

Sundar fails to disclose the step of authenticating the mobile communications device over the wireless network. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be tuned on in the WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to authenticate the mobile communications device over the wireless network as taught by Ibe, since it is part of an initialization process the mobile device has to go through in order to be authorized to receive service from the wireless network.

Sundar inherently has the *machine readable storage* given that Sundar shows a process, the process would be implemented by a processor that requires a "computer readable storage", e.g. a RAM, to function.

Regarding claim 45, the claim is rejected over the same reasons stated about claim 9, as it recites the same limitations as claim 9. See remarks about claim 9 above.

6. **Claims 5 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in view of **Ibe et al.**, and further in view of **Chaskar et al. U.S. Publication No. 2004/0090937 A1.**

Regarding claim 5, the combination of Sundar and Ibe discloses the method of claim 4, however fails to address wherein said initiating step further comprises the step of setting up an Internet Protocol streaming session over the Internet and the wireless network to which the cellular call is switched. Chaskar teaches that a user while in the coverage area of a WLAN can initiate an Internet session such as a voice over IP (VoIP) call or a multimedia conferencing call (p.0020, lines 1-6). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to setting up an Internet Protocol streaming session over the Internet and the wireless network as taught by Chaskar, because a wireless network, i.e. WLAN, support the initiation of Internet sessions.

Regarding claim 41, the claim is rejected about the same reasons stated about claim 5, as it recites the same limitations of claim 5. See remarks about claim 5 above.

7. **Claims 6 and 42** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in views of **Ibe et al.**, **Chaskar et al.**, and further in view of **Mousseau et al. U.S. Publication No. 2005/0159153 A1.**

Regarding claim 6, the combination of Sundar, Ibe and Chaskar discloses the method of claim 5, however fails to disclose the step of tearing down the cellular call. Mousseau discloses a method and apparatus for seamless switching between calls between different wireless networks (abstract, lines 1-3). When an initial voice call is either placed or received by a mobile device and moves from the first wireless network, e.g. GSM/GPRS, to a second wireless network, e.g. 802.11 wireless LAN, the voice call is initialed maintained, the mobile device instruct to place another call

through the WLAN network, and once the mobile device has the new call it merges with the existing call and terminates the GSM/GPRS call (p.0032-0033). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to tear down the cellular call after handoff is complete as suggested by Mousseau, since the cellular call is no longer necessary after the ongoing communication is switched with the call in the wireless network.

Regarding claim 42, the claim is rejected over the same reason stated about claim 6, as it recites the same limitations of claim 6. See remarks about claim 6 above.

8. **Claims 8 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in view of **Ibe et al.**, and further in view of **Jagadeesan et al. U.S. Publication No. 2005/0059400 A1.**

Regarding claim 8, the combination of Sundar and Ibe discloses the method of claim 7, but fails to disclose wherein the invitation is sent only if a signal detected from the wireless network is more powerful than a signal from the cellular network. Jagadeesan discloses a method for handing of a call between networks (abstract, lines 1-7). The method include the step of monitoring the quality of a first link, i.e. received signal strength, between a mobile station and a first network, e.g. WLAN or cellular network, when actively connected on a call and monitoring a second link with a second network, e.g. WLAN or cellular, and handing off the call from the first network to the second network when the quality of the first link is less than a handoff trigger threshold and the quality of the second link is greater than a quality threshold, e.g. second link quality > first link quality, the call is handed off from a cellular network to a wireless network if the cellular network is the preferred or default network and vice-versa (p.0004, lines 9-13; p.0032, lines 1-7; p.0041; 0042, lines 1-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to send an invitation only if the signal detected from the wireless network is more

powerful than a signal from the cellular network as suggested by Jagadeesan, since the power of a signal gives an indication of the quality of the link and therefore if the signal from the wireless of the network is more powerful than of the cellular network handoff to the wireless network is necessary.

Regarding claim 44, the claim is rejected over the same reasons about claim 8, as it recites the same limitations of claim 8. See remarks about claim 8 above.

9. **Claims 10, and 46-48** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in view of **Ibe et al.**, and further in view of **Ranta et al. U.S. Patent No. 6,308,066 B1.**

Regarding claim 10, the combination of Ibe and Ranta discloses the method of claim 7, but fails to disclose wherein said initiating step further comprising the step of attenuating the signal provided to the cellular network from the mobile communications device, thereby causing the cellular network to handoff of the cellular call. Ranta teaches when there is a long distance between the mobile station and the base station or high attenuation on the radio path from the base station, a handover has high probability to occur (col.3, lines 1-6). Therefore, it would have been obvious to one having ordinary skill in the at the time of the invention, to attenuate the signal provided to the cellular network from the mobile communications to handoff a cellular call as taught by Ranta, because there is a high probability of a handover when there is high attenuation on the radio path between the mobile station and the base station.

Regarding claim 46, the claim is rejected over the same reasons stated about claim 10, as it recites the same limitations of claim 10. See remarks about claim 10 above.

Regarding claim 47, the claim is rejected over the same reasons stated about claim 11, as it recites the same limitations of claim 11. See remarks about claim 11 above.

Regarding claim 48, the claim is rejected over the same reasons stated about claim 12, as it recites the same limitations of claim 12. See remarks about claim 12 above.

10. **Claims 15-17, 34, and 51-54** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Belkin et al. U.S. Publication No. 2005/0070288 A1** in view of **Chaskar et al. U.S. Publication No. 2004/0090937 A1.**

Regarding claim 15, Belkin discloses a method of roaming between a cellular network and a wireless network comprising the steps of:

receiving a communication over the cellular network, wherein the communication is sent from a mobile communications device engaged in a wireless call over the wireless network (p.0033, lines 4-16; a mobile station in an ongoing communication while in the WLAN coverage initiates a handover call using the second network and received by the mobility manager);

sending an acknowledgement of the communication to the mobile communications device over the cellular network (p.0033, lines 17-20); and

initiating a handoff, wherein the established wireless call is switched from the wireless network to the cellular network (p.0061, lines 1-4; p.0064, lines 6-15; p.0066; the mobility manager connects the ongoing call with the handover call in the cellular network, thus the ongoing communication is handed over from the WLAN network to the cellular network). Belkin fails to disclose the step of authenticating the mobile communications device over the cellular network. Chaskar discloses a method of handoff from a WLAN to a Cellular Network (abstract, lines 1-3), and teaches that before attempting a handoff from a WLAN to a cellular network, e.g. cdma2000, the mobile station should first perform authentication and authorization procedures with the cellular network (p.0020, lines 1-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to authenticate the mobile communication device over the

cellular network as taught by Chaskar, in order to determine if a mobile device user is subscribed to the network and charge for the service to the user's subscription account.

Regarding claim 51, the claim is rejected over the same reasons about claim 15, as it recites the same limitations of claim 15. See remark about claim 15 above.

Regarding claim 16, the combination of Belkin and Chaskar discloses the method of claim 15, Belkin further disclose wherein the wireless network is configured according to at least one of the 802.11, 802.15.3, or 802.16 communications protocols (p.0016, lines 11-14; the wireless communication units have short range capability normally referred as WLAN capabilities such as IEEE 802.11, since the wireless unit is compliant with the IEEE 802.11 protocol, the wireless network inherently is configured with the IEEE 802.11 protocol).

Regarding claim 52, the claim is rejected over the same reasons stated about claim 16, as it recites the same limitations of claim 16. See remarks about claim 16 above.

Regarding claim 17, the combination of Belkin and Chaskar disclose the method of claim 15, Belkin further disclose wherein said initiating step comprises the step of a mobile switching center sending a communication to a gateway indicating that the mobile communications device has received a signal having a minimum amount of power from the cellular network (p.0028, lines 9-13, 19-21; p.0061, lines 16-22; p.0064, lines 1-9; when the wireless communication unit moves closer to the boundary of the WLAN it will be determined that a handover is necessary, this is usually done by assessing a signal quality level, e.g. received signal strength, and comparing to a threshold for example determining if the received signal has a minimum amount of power, after a handover condition is determined a handover call is initiated, i.e. communication, which is received at the network switching center, i.e. gateway, and this is an indication that a handover condition was met).

Regarding claim 53, the claim is rejected over the same reasons stated about claim 17, as it recites the same limitations of claim 17. See remarks about claim 17 above.

Regarding claim 18, the combination of Belkin and Chaskar discloses the method of claim 17, Belkin further disclose wherein said initiating step further comprises the step of setting up a cellular voice link to which the wireless call is switched (p.0033, lines 7-13; p.0066, lines 6-10; a handover call is initiated through the cellular network and the ongoing call, i.e. wireless call, is switched to the handover call)

Regarding claim 54, the claim is rejected over the same reasons stated about claim 18, as it recites the same limitations of claim 18. See remarks about claim 18 above.

Regarding claim 34, Belkin discloses a system for roaming between a cellular network and a wireless network comprising:

means for receiving a communication over the cellular network (p.0033, lines 4-17; p.0064, lines 1-9; the network switching function of the first network receives a handover call, i.e. communication, and finally received at the mobility manager, the mobility manager inherently has means to receive the communication, e.g. receiver), wherein the communication is sent from a mobile communications device engaged in a wireless call over the wireless network (p.0033, lines 4-10);

means for sending an acknowledgement of the communication to the mobile communications device over the cellular network (p.0033, lines 17-20; the mobility manager sends an acknowledgement of the handover call, inherently has means to send the acknowledgement, e.g. transmitter) and

means for initiating a handoff, wherein the established wireless call is switched from the wireless network to the cellular network (p.0066, lines 6-10). Belkin fails to disclose means for

authenticating the mobile communications device over the cellular data network. Chaskar discloses a method of handoff from a WLAN to a Cellular Network (abstract, lines 1-3), and teaches that before attempting a handoff from a WLAN to a cellular network, e.g. cdma2000, the mobile station should first perform authentication and authorization procedures with the cellular network (p.0020, lines 1-10). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to provide means for authentication of the mobile communication device over the cellular network as taught by Chaskar, in order to determine if a mobile device user is subscribed to the network and charge for the service to the user's subscription account.

11. **Claims 19 and 55** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Belkin et al.** in view of **Chaskar et al.**, and further in view of **Mousseau et al.**

Regarding claim 19, the combination of Belkin and Chaskar discloses the method of claim 18, however fails to disclose comprising the step of tearing down a streaming session over which the wireless call took place in the wireless network. Mousseau discloses a method and apparatus for seamless switching between calls between different wireless networks (abstract, lines 1-3). When an initial voice call is either placed or received by a mobile device and moves from the first wireless network to a second wireless network, the voice call is initialed maintained, the mobile device instruct to place another call through the second wireless network, and once the mobile device has the new call it merges with the existing call and terminates the call through the first wireless network (p.0032-0033). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to tear down the wireless call after handoff is complete as suggested by Mousseau, since the wireless call is no longer necessary after the ongoing communication is switched with the call in the cellular network.

Regarding claim 55, the claim is rejected over the same reasons stated about claim 19, as it recites the same limitations of claim 19. See remarks about claim 19 above.

12. **Claims 24, 29, and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Belkin et al.** in view of **Khartabil et al U.S. Publication No. 2004/0249891 A1.**

Regarding claim 24, Belkin discloses a system for roaming between a cellular network and a wireless network comprising:

an access point configured to wirelessly communicate with devices and facilitate communications over the Internet (Fig. 15, WLAN 200 has a plurality of access points linked to IP ;

a gateway configured as an interface between the Internet and the cellular network (Fig. 15, WLAN MSC 302);

a mobile data base station configured to communicate with mobile communications devices over a cellular voice channel of the cellular network (Fig. 15, BTS); and

a mobile switching center configured to route cellular calls and link said mobile data base station with said gateway (Fig. 15, WWAN MSC 110);

wherein said gateway and said mobile switching center work cooperatively to switch calls between the cellular network and the wireless network via the Internet (p.0083-0084).

Sundar fails to disclose a Session Initiation Protocol proxy server configured to perform call routing over the Internet and wherein calls over the Internet are managed by said Session Initiation Protocol proxy server. Khartabil teaches that a proxy server is used for to create SIP sessions such as Internet telephone calls, multimedia distribution, and multimedia conferences (p.0004). Therefore, it would have been obvious to one having ordinary skill in the art to include a SIP proxy server in the system, because a proxy server assists with the establishment of Internet sessions as taught by Khartabil.

Regarding claim 29, the combination of Sundar and Khartabil discloses the system of claim 24, wherein said gateway further is configured to function as an interface to the public switched telephone network (Fig. 15; WLAN MSC 302, i.e. gateway interfaces with the PSTN network).

Regarding claim 30, the combination of Sundar and Khartabil discloses the system of claim 24 wherein a call has been established over the wireless network using a streaming session (p.0077, lines 1-8; the mobile station engaged is a call in the WLAN network), wherein said gateway terminates the streaming session and transfers the call to said mobile switching center, said mobile switching center routing the call to said mobile data base station (p.0078; the handoff of the ongoing call is made from the WLAN to the WAN, when the MS enters a WWAN, it is inherent that the ongoing communication with the WLAN is terminated when the handover occurs to the WWAN).

13. **Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in view of **Khartabil et al.**, and further in view of **Ibe et al.**

Regarding claim 25, the combination of Sundar and Khartabil discloses the system of claim 24, wherein a call has been established over a voice channel of the cellular network (p.0083, lines 1-3), wherein said gateway receives an invite formatted using Session Initiation Protocol from a mobile communications device having detected the wireless network (p.0084, lines 10-13; Fig. 20, SIP INVITE). Sundar fails to disclose that the system authenticates a Session Initiation Protocol client operating in the mobile communications device. Ibe discloses a method of seamless roaming between wireless local area networks and cellular carrier networks (abstract, lines 1-6) and teaches that when a mobile device happens to be on a WLAN goes through an initialization process in which the mobile device sends a registration message to an authentication server that authenticates the mobile device (p.0017, lines 1-8). Therefore, it would have been obvious to one having ordinary

skill in the art at the time of the invention to authenticate the mobile communications device over the wireless network as taught by Ibe, since it is part of an initialization process the mobile device has to go through in order to be authorized to receive service from the wireless network.

14. **Claim 26** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in views of **Khartabil et al., Ibe et al.** and, **Chaskar et al.**

Regarding claim 26, the combination of Sundar, Khartabil, and Ibe discloses the system of claim 25, Sundar further disclose wherein said gateway acknowledges the session initiation protocol invite (p.0084, lines 13-14; Fig. 20, SIP 200 OK). However fails to disclose to initiate an Internet Protocol streaming session to the mobile communications device. Chaskar teaches that a user while in the coverage area of a WLAN can initiate an Internet session such as a voice over IP (VoIP) call or a multimedia conferencing call (p.0020, lines 1-6). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to setting up an Internet Protocol streaming session over the Internet to the mobile communications device as taught by Chaskar, because a wireless network, i.e. WLAN, support the initiation of Internet sessions.

15. **Claims 27-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sundar et al.** in views of **Khartabil et al., Ibe et al., Chaskar et al., Roach Jr U.S. Patent No. 5,845,211, and Fors et al. U.S. Publication No. 2004/0203788 A1.**

Regarding claims 27 and 28, the combination of Sundar, Khartabil, Ibe and Chaskar discloses the system of claim 26, but fails to disclose wherein said mobile switching center handoffs a cellular call to another mobile data base station upon detecting reduced signal power from the mobile communications device and said gateway signals said mobile switching center that a signal of sufficient power has been received via the wireless network, and further wherein said mobile switching center switches the call from the mobile data base station to the gateway. Roach teaches

that in conventional wireless cellular networks call handoff are handled by MSCs and occurs when the wireless system determines a handoff is desirable when a first base station senses a signal below a predetermined threshold and the call is handed off from an original base station to another (col.1, line 47- col.2, lines 1-12) and further the mobile switching center switches the call from the mobile data base station to the gateway (p.0033). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention for a mobile switching center to handoff a cellular call to another base station when detecting a reduced signal power from the mobile communication device as suggested by Roach, because it is a common functionality of the mobile switching center to handoff calls to another base station if a signal quality in the current base station is degraded.

However, Sundar, Khartabil, Ibe, Chaskar, and Roach fail to disclose wherein said gateway signals said mobile switching center that a signal of sufficient power has been received via the wireless network. Fors discloses a method for handoff from a cellular wireless network to a non-cellular wireless network, e.g. WLAN, and describes access gateways that enable such handoffs (abstract, lines 1-5). As a mobile station moves within the coverage area of the WLAN, the MS performs signal strength measurements and at some point determines that a handoff from serving BS to AP, i.e. wireless network. The processor sends a handing request to CAG, i.e. cellular access gateway, and it sends handoff request, i.e. indication of signal with sufficient power from wireless network, to the MSC to trigger inter-MSC handoff procedures. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention for a gateway to signal said mobile switching center that a signal of sufficient power has been received via the wireless network as suggested by Fors, in order for the MSC to initiate the handoff procedures of a call from a cellular to a wireless network.

Conclusion

16. Any response to this Office Action should be **faxed to** (703) 872-9306 **or mailed to**:

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Marisol Figueroa

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PRIMARY EXAMINER
9/2/05